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MEASURING COACH-ATHLETE COMPATIBILITY

by

(C) BEATRIX PATRICIA BAKER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

The study investigated coach-athlete compatibility scores tabulated by the FIRO-B and the TAIS. Compatibility scores from the combined scales of control and self-esteem on the TAIS were correlated with the compatibility scores of control on the FIRO-B. Also, compatibility scores from the combined scales of introversion and extroversion on the TAIS were correlated with the compatibility scores of inclusion from the FIRO-B. The FIRO-B, designed by William Schutz (1966) was the criterion measure, with the TAIS, developed by Robert Nideffer (1976) as the test to be validated as an accurate instrument to measure coach-athlete compatibility.

The subjects from the study were 43 athletes and seven coaches from the men's and women's basketball and volleyball teams at the University of Alberta. The FIRO-B and the TAIS were administered to all of the coaches and athletes. Relative compatibility scores for each of the coaches and the athletes on their teams were determined and these results were rank-ordered within each of these groups.

Intertest agreement of the groups was examined as the groups were divided into three relative categories: low, medium, and high compatibility. The relationship between the two tests was in a positive direction, but significance could not be proven in either the control or the inclusion areas. A Spearman Rank Correlation within each of the groups showed that there was no significant correlation between tests in 10 of the 14 groups. Significance in three of the other groups was at the (p. 05) level and for one group at the (p. 01) level. On the basis of the results there does not appear to be a significant correlation between the two tests in either the inclusion or control areas. The

relationship was moderately positive in some of the groups, while others showed a low positive relationship. One group showed a low negative relationship.

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CHAPTER I

Introduction

Coaches and athletes, with the aid of sport psychologists, are becoming increasingly aware of the psychological components that contribute to effectiveness during performance. One of these components is the interpersonal relationship that exists between the coach and athlete. This interaction is crucial to the successful operation of the team because of the extensive hours spent in practice and game situations. The learning that takes place in a teaching situation, such as a practice, is directly related to the compatibility between the coach and the athlete (Lanning, 1980). Also, the motivational level of the athlete is said to be increased when the coach and athlete are interacting positively towards each other (LaRose, 1981). These and other factors will all be associated to the performance of the team.

To date, insufficient amounts of research have been concerned with the total area of coach-athlete compatibility. Many leadership theories have evolved towards studying the interaction that occurs but only from the perspective of the coach, with the athlete treated as a virtual non-participant (Carron and Bennett, 1977). Interactionist theories of leadership are now attempting to study the interaction of all of the persons involved, the situation surrounding those people, and the nature of the task structure.

As a personality theorist, William Schutz (1966) developed the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) test to study and evaluate the interaction that occurs between two people. The basis of Schutz's theory is that "people need people" (p. 1). Those needs can be encapsulated into three areas: the need for control,

inclusion, and affection. Within each of these areas is behavior that expresses a need, and behavior that asks for or wants these needs from others. Within a relationship there is a cycle of emphasis through which these needs pass. Initially the most important need is that of inclusion, for without an association of some degree with another person, there is no interaction. This need is followed by an emphasis on control; a determination of the degrees of control that each person will have. A study of Perceived Role Behavior by Carron (1977) found the coach to be the initiator of control in the athletic situation. Problems may occur when the coach does not want control of the situation or both the coach and athletes want equal amounts of control. The third stage in the cycle is the need for affection. In an interpersonal relationship where task performance is not so prominent, this stage may develop very naturally. However, on sports teams it tends to be overshadowed by performance requirements and the leader-subordinate role expectations of a coach and athlete. Evidence of this was found by Carron and Bennett (1977) when only control and inclusion were able to distinguish between compatible and incompatible dyads. A dyad is formed between a coach and each of their athletes as they interact together in a one-on-one situation. They would be considered compatible in each of the need areas when they mutually satisfy each other's needs. Incompatibility would be created when they were not able to satisfy each other's needs in any or all of the three areas.

The FIRO-B may be an adequate interpreter of coach-athlete compatibility but there are other instruments available which may be used to examine this construct. The TAIS, developed by Robert Nideffer (1976) has nine interpersonal scales incorporated into the scoring, although it has been used mainly in the area of attentional phenomenon. Some of

these scales have been identified as potential indicators of the interpersonal interaction that occurs between two people. Nideffer (1981) has made the following statement about his TAIS:

> Because of the strong relationship between increasing arousal and attention and because of the role both play in performance, the addition of personality traits and needs, interpreted within the confines of interpersonal relationships, can act to increase the ability to predict and control behavior. (p. 23)

Alderman (1984) has clearly stated that the use of the TAIS can and should be extended beyond that of just attentional style determination; that the identification of potential stress areas between the coach and their athletes is also of crucial importance in interpersonal behavior.

Carron (1978) found inclusion behavior to be the most critical need area in coach-athlete interactions. Subjects who were part of an incompatible dyad were detached and withdrawn from each other, preferring isolation. In the area of control, there appeared to be some role agreement, with the coach being the initiator and the athlete the recipient. Problems of conflict arise when there is incompatibility in the need for control and such role expectations are not maintained. The affection area was found to be less salient in many of the sports studies because of the overshadowing of task performance, rather than the development of a more intimate relationship between the coach and athlete. This need may be more significant in studies that are extended over a longer period of time.

This study is concerned with determining the association between interpersonal relations as measured by two instruments, the TAIS and the FIRO-B, in the need areas of inclusion and control in the intercollegiate sports setting. The subjects involved are men's and women's basketball and volleyball players, whose performance tasks are

interdependent within the team and whose performance effectiveness may be influenced by the degree of compatibility exhibited between the coaches and their athletes. Reciprocal Compatibility is the potential that two people have towards mutually satisfying each other's needs and will be calculated in the two need areas of inclusion and control, as determined by the FIRO-B. Compatibility in these areas will also be evaluated using four of the interpersonal scales of the TAIS; control, self-esteem, introversion, and extroversion. If correlations between the results of the two tests are reasonable, it will open up a new avenue of study and possible validation of the TAIS as an instrument to examine coach-athlete compatibility. For those using the TAIS as an instrument to detect attentional problems, it may be utilized in interpreting where interpersonal stress between the coach and athlete may exist.

In all psychological testing that is administered to athletes a clear perspective must be kept in dealing with the results.

> Every player on a team is different and must be treated differently (Lanning, 1980, p. 365).

In addition, every situation is unique and the steps taken in solving interpersonal problems should be determined by all of the contributing factors. Psychological tests can only be used to detect problems and not as a personality test that one passes or fails. The final concern of all those involved should be the attainment of their goals in a positive, cooperative environment. It may be wise to heed the following:

> Rigidity and inflexibility on the part of either the coach or the athlete will hinder the development of a working relationship between them (Lanning, 1980, p. 367).

Statement of the Problem

The main focus of this study is to compare the results of four interpersonal scales on the TAIS with two scales on the FIRO-B and conclude whether the TAIS results for compatibility are similar to those obtained by the FIRO-B.

The inclusion scores on the FIRO-B will be compared to extroversion and introversion on the TAIS. The control scores on the FIRO-B will be compared to the control and self-esteem scores on the TAIS. Before the results are compared, compatibility scores will be determined on each test using the appropriate raw scores taken from each subject's answer sheet. For the FIRO-B, reciprocal compatibility, which is the potential that two people have for mutually satisfying each other's needs, will be calculated. The TAIS will compare the combined extroversion and introversion scores of the coach, as a unit, to the combined extroversion and introversion scores of the athletes on the individual teams. The same format will be used for the control and self-esteem scores on the TAIS.

A sub-problem of this study is to determine if the scales on the TAIS and FIRO-B, being compared to each other, are measuring the same constructs.

Justification of the Study

This study is justified on the following grounds:

1. With the caliber of athletic performance accelerating at its present rate, those involved with the psychological element of performance must be prepared to advance and broaden their horizons so that they might contribute to further insight and understanding of relevant phenomenon.

2. No causal relationship has been demonstrated as yet between coach-athlete compatibility and successful performance. However, conditions leading to effective team performance are influenced by many behavioral factors, a significant one being that of interpersonal relationships. There must be extensive research conducted in the area of coach-athlete compatibility to determine ways in which it can be measured and evaluated. A causal relationship has not been proven, but neither has it been excluded as a possibility.
3. In any team sport, such as volleyball and basketball, extensive hours are spent in interaction between coach and athlete, striving towards the achievement of certain goals. This interaction must be examined and evaluated to determine its influence on the overall situation. If the TAIS can be another instrument to evaluate that interaction, then advances towards a better understanding of the concept can be made. In the past the TAIS has proven to be an excellent counselling tool, with the profile sheet accessible for an easy visual analysis of the results.
4. The TAIS is presently used exclusively to describe attentional factors that may be influencing performance. Identification and explanation of potential interpersonal stress between team members and coaches may be an additional feature of the test (Alderman, 1984). Athletes with or without attentional problems may be stressed by interpersonal conflict between themselves and the coaching staff. Detection of possible incompatibilities by the TAIS may warrant further attention to the situation.
5. This study will be able to examine the concurrent validity of the four interpersonal scales on the TAIS. This will be done by using the FIRO-B as the criterion measure by the interpersonal behaviors

being measured.

Hypotheses

The following research hypotheses were tested to compare the results of the TAIS to the results of the FIRO-B on coach-athlete compatibility:

1. Control compatibility of the coaches and their athletes as measured by the control and self-esteem scales on the TAIS showed a positive relationship to the reciprocal control compatibility as measured by the FIRO-B.
2. Inclusion compatibility of the coaches and their athletes as measured by the introversion and extroversion scales on the TAIS showed a positive relationship to the reciprocal inclusion compatibility as measured by the FIRO-B.

Delimitations

The scope of the study was delimited as follows:

1. The study utilized the FIRO-B scale designed by W.C. Schutz (1966) to measure the control and inclusion need behaviors of the coach and athletes. Dyads were studied as each coach, assistants included, and athlete was given a score for their reciprocal compatibility in the two need areas.
2. The study used the TAIS, a test designed by Robert Nideffer (1976). The four scales that were examined from this test were the control, self-esteem, extroversion, and introversion scales.
3. The subjects included the head coach, assistant coaches and players from the 1984-85 intercollegiate volleyball and basketball teams at the University of Alberta.
4. The FIRO-B reciprocal compatibility ratings were the criterion measure against which the corresponding compatibility ratings from

the TAIS were assessed. The dependent variables, therefore, were the ratings of each of the scores from the TAIS. The independent variables were the compatibility ratings as determined by the criterion measure, the FIRO-B.

5. The FIRO-B scores were calculated according to a formula for reciprocal compatibility (see Appendix D) and the TAIS compatibility scores were determined by a descriptive analysis done by the researcher according to Nideffer (1981, 1976) and the following hypotheses:

   Hypothesis 1: Incompatibility occurred between the coach and athlete if they had similar scores on the control and self-esteem scales. This interpersonal stress occurred in the control behavior context.

   Hypothesis 2: Incompatibility occurred between the coach and athlete when there were not similar scores or a similar relationship between the extroversion and introversion scores. This interpersonal stress occurred in the need area of inclusion.

Limitations

The following were the limitations of this study:

1. Random selection of subjects was not attempted. Intercollegiate volleyball and basketball players and coaches from the University of Alberta were the subjects.
2. Interpersonal behavior was examined only in the need areas of inclusion and control, and the third area, affection, was not incorporated in the study.
3. The athletes and coaches may have responded negatively to being administered two tests, both of them being general in nature, rather

than sport specific.

4. The sample size was not extremely large. There were 75 dyads examined as each coach and assistant coach were paired with the athletes on their teams. Groups, however, could not be compared as relative scoring for each group was used.
5. There may have been some uncontrollable stress during testing although attempts were made to administer the tests under relaxed, comfortable conditions.
6. The questionnaires were of a closed nature in that choices were given and the person selected from one of the answers provided. It could only be assumed that a total continuum of scores were available.
7. All responses were accepted as given. In any study involving the use of a paper and pencil questionnaire, the answers are relevant only if they are given sincerely and honestly.
8. The test administration was done by the researcher and other involved persons. The tests were not administered together in all cases and the order of the writing was not monitored. The administrators of the test used the instructions found in Appendix B.
9. The TAIS has never been used before in any other capacity other than to measure attentional styles, with the interpersonal scales being interpreted in light of the attentional scales. It may have been questioned whether the interpersonal scales should have been examined independently of the other scales on the test.

Definitions

TAIS - The Test of Attentional and Interpersonal Style developed by Robert Nideffer (1976). The portions of the test that were used

were the four interpersonal scales; control, self-esteem, extroversion, and introversion.

FIRO-B - Fundamental Interpersonal Relations Orientation-Behavior, designed by William Schutz (1966). The control and inclusion scales of this test were utilized in determining reciprocal compatibility.

Coach-Athlete Compatibility - This is the equilibrium between the coach and the athlete concerning an expression and wanting in the three need areas of control, inclusion, and affection. What one person, the coach, feels they can express or want must be congruent with what the other person, the athlete, expresses and wants, within the three need areas. It is a harmonious togetherness, which may be influenced by role expectations.

Incompatibility - An absence or lack of interpersonal equilibrium between two people. This is due to a lack of consistency between what each expresses towards or wants from the other.

Reciprocal Compatibility - The potential that two people have towards mutually satisfying the dimensions of each other's needs, that being the expression and wanting of one of the three need areas. It is calculated from the raw scores in each of the need areas (see Appendix D).

Interpersonal Need - The requirements to establish a satisfactory relation between the individual and his human environment (Schutz, 1966, p. 16). This need is met when one is able to attain a satisfactory relationship with others.

Inclusion - This is defined as behavior directed towards the satisfaction of the interpersonal need to belong and interact with others.

Synonyms are: associate, interact, communicate, . . . extrovert (Schutz, 1966, p. 21).

Control - This is defined as behavior directed towards the satisfaction of the interpersonal need for control and influence. Someone with a high need for control will attempt to gain control of interpersonal situations. The perception of oneself is as a competent, responsible person (Schutz, 1966).

Extroversion - This is a person's tendency to be with other people and to be the center of attention. The extrovert is outgoing and needs to be with other people (Pratt, Nideffer, 1981).

Introversion - This is defined as a need for privacy and being alone. An introvert enjoys quiet times and avoids being the center of attention. It is not necessarily an indication of dislike for other people (Pratt, Nideffer, 1981).

Self-Esteem - This reflects how people project themselves and how they believe others feel about them. A person with high self-esteem thinks very highly of themself, is very confident, and may not accept personal criticism very easily.

Interdependent Sport - A sport in which each player has his or her own specific task, but in which that task must be executed in relation to the rest of the team to produce a coordinated result.

CHAPTER II

REVIEW OF LITERATURE

Research in the area of interpersonal relationships between a coach and athlete is in its infancy. Prior to the shift towards interaction, research had dealt very emphatically with leadership theories surrounding sport and other areas of our lives. Initially no regard was given to the subordinates of the situation and only the personality characteristics of the leader were examined.

This review of literature extends over three areas. The first section will give a brief summary of the evolution of personality theories because they are the basis to further progress in the other areas. The second section will discuss leadership topics and how leadership theories have evolved to the much more complex examination of the coach and athlete. The final section on interpersonal relations is a stepping stone of leadership theories, with the coach and athlete recognized by many as equally important entities in the study of leader-subordinate interaction. Within this final section the basic theories behind the instruments used for the study will be tied into the interaction research.

Personality Theories

The first theories of personality were Psychodynamic Theories. Abnormal or disturbed persons were the focus of attention and their behavior was explained by the conflict areas that resided within each person. Freud categorized these three areas as ID, EGO, and SUPEREGO and classified all behavior using these dimensions (Maddi, 1972).

As the theories of personality expanded to the study of less disturbed subjects, they began to adopt a more humanistic approach, explaining behavior as a function of need requirements. Maslow (1962) developed a need hierarchy, explaining people's needs in an order of importance. The first and most crucial need was physiological, followed by the needs for safety, love, esteem, and finally self-actualization.

Theories of physiques and body types serving as a disposition factor towards behavioral consistency were the starting points towards the most crucial phase in personality research. For consistency theorists, the content of one's personality was largely learned and was representative of the feedback of a person that resulted from interacting with the environment (Maddi, 1972). The strongest impact on this research came with the introduction of trait theories. The fundamental assumption of the trait theorists was that behavior would be stable across situations and over time (Carron, 1980). Behavior was a result of factors that resided within a person (their traits) and environmental influences were of secondary importance.

As the environmental influence became more recognized, situational theorists stressed actual behavior as being more important. They felt behavior could not be inferred from theoretical constructs but rather that each situation warranted its own unique behavioral response.

Clearly the trait and situational theorists needed to compromise towards a total understanding of what influenced behavior. This final viewpoint was labelled the Interactionist Approach. Behavior was a function of the personality, the situation and the interaction that occurred between them (Kane, 1978).

Personality theories are very important in understanding the foundations of the research being explored in this study. The FIRO-B

has based its initial assumptions on trait theories (Schutz, 1966) as has the TAIS (Nideffer, 1978). From that point, individuals can be placed in their respective interacting situations and the examination of that phenomenon can be explored.

Leadership Theories

The first theories on leadership rationalized that people became leaders by tradition or inheritance. This was replaced by the very prominent theory of Trait Leadership. In this theory it was postulated that leader behavior was the sole result of the individual qualities of the leaders, their physical appearance, intellect, and personality traits (Scholten, 1978). It was assumed that all groups required the same traits in their leader, and that all leaders possessed these unique traits (Straub, 1978).

Stereotyping was popular as leaders were studied exclusively for their behavior, their traits, and their decision styles. Ogilvie and Tutko (1966) stereotyped coaches as dominant, sociable, highly organized, and intelligent. They had a low interest in the needs of others and were inflexible to change. Hendry (1972) found stereotyping of a coach could be very accurate or very deceiving depending on the actions of the coach, the perceptions of those actions by the athletes, and the althete's response to the coach in social situations. Hendry (1969), in his study of "ideal" swimming coaches found no significant difference in personality between the winning and losing coaches. Both the coaches and the athletes had similar views of what the perfect coach should be like, showing the influence that stereotyping has in the area of coaching.

The trend was shifting towards acknowledging the athlete as having an influence on the situation (Carron, Chelladurai, 1983). The Human Relations Theories recognized the interaction between the coach and the athlete, as leader and subordinate, but virtually ignored the situational factors. Examples were Cratty's study (1973) which indicated that people with strong needs to exert authority preferred an authoritarian leader while persons low in the need for authority preferred democratic style coaches. Chelladurai and Saleh (1978) found males to have greater preference for an autocratic coach while females preferred democratic behavior from their coaches. To this point, leadership research was still relatively elementary and was taking into account only a limited number of variables pertaining to leadership and the entire situation around which it revolves (Chelladurai, 1980).

A good coach is flexible and behavior is influenced by these factors: personality of the leader, the personality of the athletes, and the organizational climate (Straub, 1978). This was the basis behind the Situational Leadership Theories. All of the factors must be taken into consideration before the coach can react in an appropriate manner (Straub, 1978). The only element missing was the interaction between the leader and subordinate.

There were two prominent theories concerned with the behavior or performance of the athlete being influenced by the leader. The first was the Contingency Model, developed by Fiedler (1967). It looked mainly at the leader and the situation, with the subordinate being a part of that situation. The second was the Path Goal Theory of Leadership which focused on the importance of the subordinate (House, Mitchell, 1974).

Fiedler's Contingency Model proposed that group performance is contingent upon the appropriate matching of leadership style and the degree of favorability of the group situation for the leader. Fiedler (1967) expressed it by stating that:

> One style of leadership is not in itself better than the other, nor is one type of leadership behavior appropriate for all conditions (p. 247).

Straub (1978) noted:

> Good leaders are flexible and adopt behavior for specific situations (p. 258).

Leadership style in the Contingency Model was based on the relationship of three components, leader-member relations, task structure and power position. Team effectiveness and the influence of the coach was determined to a large degree by the interpersonal relationship that a leader had with his group (Fiedler, Chemers, 1974; Fiedler, 1967). This interpersonal relationship incorporated not only the actual behaviors that exist but the perceptions and expectations on the part of both the coach and the athlete.

The second theory, the Path Goal Theory of Leadership was developed by Robert House (1971). It asserted that leader behavior was acceptable and motivating to the subordinates to the degree that it clarified goal attainment or was perceived as being instrumental to future satisfaction (House, Mitchell, 1974). The theory stressed the importance of leaders matching their behavior to that preferred by the members (House, 1971; House and Dressler, 1974). The variables which must be considered when determining the appropriate leadership style for coaches are: personality characteristics, environmental situations and demands, the skill level of the athlete, and the motivation by other athletes. These variables influence the particular situation and the compatibility level between

the coach and athlete (House and Mitchell, 1974).

Other researchers have uncovered additional information both related to those theories and as a supplement to leadership research in general. Chelladurai (1980) outlined the coach's role as that of a motivator, through the long and tedious training sessions, as a teacher of all the skills and their mastery, as an orchestrator coordinating all of the functions of the team members, and as a social supporter offering the chance for interpersonal interaction.

The final evolutionary stage, then is that of the interactionist theory, which encompassed all of the above theories in a logical fashion. This was where the link is made between leadership theories and the study of interpersonal behavior. Leadership theories have evolved from trait theories, to behavioral theories and finally to situational theories. Each of these became more complex and incorporated more of the factors that influence behavior of leaders as determined by the situation and most importantly, by the personality and behavior of the subordinates. Leadership theories have graduated to become studies of interpersonal interactions between persons in various power positions.

Interpersonal Behavior

Lewin (1955) in studying interpersonal behavior, described it very appropriately as a function of the personality and the environment. His formula can be expanded to incorporate three different categories in the coach-athlete relationship. The first being the personality, needs, etc., of the coach, the second the personality needs, etc., of the athlete, and the third category, the environmental factors (Carron, Chelladurai, 1978).

Historically, research done in the area of coach-athlete interaction revolved around the characteristics or traits of the coach. Effective interaction was the exclusive byproduct of the traits possessed by the coach. The environmental dimension was not considered, due partially to the difficulty of incorporating all three dimensions together to study at one time. Scott (1969) suggested from his study of college coaches and athletes that coaches view athletes important only if they are able to contribute to victory. Cratty (1981) dwelled more on the technical skills of the coach, postulating that there would be fewer personality conflicts if the coach knew the sport very well. The lack of proper technical knowledge could result in a magnification of personality problems. Chelladurai (1980) concurred with this finding. A leader's technical expertise was found to foster confidence and self-esteem within the leader and their structured activities were more acceptable to the members of the group. Carron and Bennett (1977) felt that the athlete was still a non-participant in many of the studies about compatibility. Each had their own traits and roles but the interaction between the coach and athlete was still not explored in most cases.

Other researchers uncovered information which they felt was crucial to interpersonal relations. Communication was the key component in the success of the coach-athlete interpersonal relationship and it must have occurred frequently and been of high quality (Singer, 1972; Widmeyer and Martens, 1978; Hendry, 1972). Misconceptions occurred when poor communication, though high in quality, was considered to be a sign of good interaction. Group size was an influencing variable of the interpersonal relationship, as was the structural make-up of the group (Singer, 1972; Osborn and Hunt, 1975; Sheridan et al., 1975).

Still others felt that the effectiveness of the group was dependent upon all members and the interpersonal relationships found within that group:

> The most successful groups, it seems, are those whose members know each other well enough to be tolerant of their strengths and weaknesses, can communicate effectively, and have a leadership pattern appropriate to task performance, but whose primary orientation, is towards the specific task rather than towards social interaction as an end in itself (Cratty, 1967:p. 41).

It became apparent that interpersonal relationships existed between the coach and athlete in the sporting situation. A clear explanation of that interaction was needed as well as an understanding of how it may have affected performance. Schutz provided a very comprehensive description of interpersonal behavior and studies have shown that it does have an influence on the effectiveness of a team's performance. Bird (1978) described its affect by postulating that some process operated above and beyond the physical skills of the individuals involved. A team sport, such as basketball and volleyball, required member interdependency and cooperation for the group to be successful. Gurber and Gray (1982) related cohesion and compatibility to success, but there was indecision as to which component preceded the other. Success may have breeded compatibility just as compatibility may have contributed to the success of the team.

The interpersonal theory behind the FIRO-B instrument used in this study was developed by Schutz (1966). He postulated that:

> A representative battery of measures of interpersonal behavior would fall into the three need areas of inclusion, control, and affection (p. 54).

Within each need area, a measure was taken of the behavior that the individual expressed towards others and how they wanted others to behave towards them. The final result was six scores; expressed

inclusion behavior, wanted inclusion behavior, expressed control behavior, wanted control behavior, expressed affection behavior, and wanted affection behavior. Once a compatibility score had been determined it was used to predict the type of interaction that may occur between two people. The matching expression and wanting scores between two people gave information about the degree of compatibility in an interaction.

The basis of Schutz's theory was that people need people. This need was described in the three kinds of behavior that existed between people. The first kind of need behavior was inclusion, defined as the need to interact and associate with other people. Those with a high need to express and want this kind of behavior are usually seen to be extroverts. Those with a low need for inclusion behavior are comparable to introverts.

The second behavior was in the control spectrum. This was defined as the need for power and influence. This behavior differed from the other two areas in that someone who expressed the need to control may not wish to be controlled by others in return.

The third behavior, affection, was the most involved and referred to the need for love, intimacy, and close friendship. As with inclusion, a person who expressed the need for affection would want that type of behavior from others.

Figure 1 shows that all degrees of each dimension can be represented (Schutz, 1966, p. 59).

The raw scores that are calculated from the FIRO-B are transformed into compatibility scores. Two individuals can have their compatibility scores calculated in any of the three need areas, or as one measure of total compatibility. Underwood and Krafft (1973) however, found that a

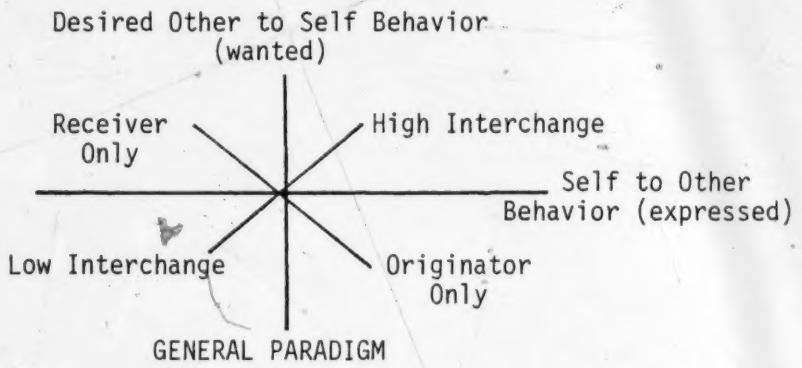

Figure 1. General Schema for Describing Interpersonal Behavior

measure of total compatibility was too gross to be used as a single measure of interpersonal compatibility.

Reciprocal compatibility will be the derivative measure used in this study because of its comparable value to the constructs of the interpersonal scales taken from the TAIS. Reciprocal compatibility:

> . . . reflects the degree to which members of a dyad reciprocally satisfy each other's behavioral preference (Schutz, 1966: p. 108).

For purposes of this study, compatibility in the areas of inclusion and control will be calculated.

Many researchers have used the FIRO-B instrument in their studies of coach-athlete interpersonal relationships. Carron (1977) revealed that the coach and athlete are in an excellent environment for high frequency of interaction. Lanning (1980) felt that every player on the team was different and should be treated differently. That made the FIRO-B very important, because of its ability to give the coach a compatibility score for each of his athletes.

Carron and Bennett (1978), in their studies of coach-athlete dyads, found inclusion behavior to be the most critical factor in assessing compatibility. Their results showed that detached behavior was very characteristic of incompatible dayds. The control area was a

concern, especially to coaches, because of the continual emphasis placed on leader effectiveness and the stereotypic portrait of the domineering coach that existed in much of the literature. The area of affection appeared relatively insignificant at the point in which testing took place. This was attributable to the cycle that the need areas flowed through, with inclusion occurring at the initial stages, followed by an emphasis on control. Affection was the final stage (Schutz, 1966). This cycle was extended over a time period that spanned more than the one year training periods in which the coach and athlete are most often observed in. The length of the inclusion and control stages may be too long for the affection stage to have much influence on the situation. Perceived Role Expectations may also hinder the affection stage in a coach-athlete training situation.

Lanning (1980) hypothesized that the learning that occurred within the teaching situation between coach and athlete was directly related to the compatibility of their interaction. If there was positive interaction occurring, the athlete would be more highly motivated to create a constructive working relationship between the coach and themself. Rigidity or inflexibility would hinder that relationship.

Still others suggested that compatible dyads preferred each other for continued personal contact and incompatibility served as a criterion for the exclusion of athletes from teams (Pease et al., 1971). This criterion would appear drastic yet results indicated that there was a higher attrition rate between incompatible coach-athlete dyads as compared to compatible dyads. Those judged as compatible remained with the team for an average period of time significantly greater than those assessed as incompatible (Carron, Chelladurai, 1978). According

to Pease et al. (1971), attrition of athletes was most related to incompatibility in the need area of control. Athletes who remained, but were considered incompatible appeared to be influenced by other factors such as parents, peers, or the overwhelming desire to play. For university athletes, the desire to play was very important because of eligibility rulings. Those wishing to change teams must refrain from participation on any other university team for one year, a consequence not taken lightly by the competitive athlete.

In the area of perceived role behavior for coaches and athletes in the three need areas of inclusion, control, and affection, results showed that both coaches and athletes were in agreement concerning perceived role behaviors (Carron, 1978). Coaches were seen as the initiators of control, athletes then recipients, while both were perceived as low initiators of affection and inclusion. Regardless, then, of the excellent opportunity for interaction that is available to coaches and athletes, the quality or effectiveness of the interaction is not guaranteed (Carron, 1977).

Task structure was important in determining the degree of compatibility deemed most appropriate for coach-athlete interaction. Greater compatibility has proven more effective in interdependent tasks, but Lenk's study (1969) of rowing teams found different results as did a study by Hill (1975). Incompatibility in both cases, was the characteristic found in the groups with effective performance records. The task structure in these independent sports warranted little personal interaction as being necessary in performing the task. There was no need for cooperation by the team members in the sense that the job could not be done without excessive interaction. In the case of the rowing teams, the incompatibility seemed to inspire competitiveness

and individual achievement, resulting in higher performance levels.

The FIRO-B has also been used in research areas other than the athletic scene. Sapolsky (1965) evaluated the relationship between doctors and patients. He found a positive relationship between compatibility, as measured by the FIRO-B, and the outcome of treatment. The experiment was done with psychotic patients, who, it is believed, have a heightened sensitivity to the reaction of others. Those patients who were rated compatible with the doctor felt that the doctor understood them better.

Liddell and Slocum (1976) used a central leader-to-member communication network to test task performance in a laboratory setting. The dependent variables were solution time and number of errors. The compatible group scored significantly better than the incompatible group, but not the random group. This would indicate that moderately compatible groups, as the random group should have been, are also capable of working towards a task effectively.

In a role assignment experiment by Smelser (1961), the most productive dyads were those who were paired according to their preferred behavioral styles. A dominant person given the dominant role, paired with a submissive person given the submissive role, were the most productive, supporting Schutz's theory of reciprocal compatibility.

DiMarco (1974) used the measure of reciprocal compatibility for dyads formed in work groups. The more compatible the lifestyles and interpersonal needs of the subordinates, the more favorable were their attitudes towards the supervisor.

> People are attracted to those people who can fulfill their needs and whose needs they can fulfill (DiMarco, 1974, p. 575).

He labelled this as the presence of a need-complementarity-attraction relationship.

The hypothesis about compatibility and work productivity was not supported in a study by Underwood and Krafft (1973). They used the median score on work effectiveness to create a high-low dichotomy and then compared compatibility scores of these two groups. One problem with the study, as stated by the researchers themselves, was the absence of the very low compatibility scores for comparison. The tasks of factory workers may be considered more of the independent task type, with each person being responsible for their own job. Productivity was not affected by their relationship and there was very little interpersonal interaction.

> A great deal of research has been done on FIRO-B and scattered research has been done on the other FIRO instruments. In general the results have been very good: about 82 per cent yielded positive results. . . . Those who make use of the theory and the scales are generally enthusiastic about the results (Schutz, 1978:p. 36).

The second instrument in this study, the TAIS, had not been used previously to determine compatibility levels between coaches and athletes. The interpersonal scales have only been used in conjunction with the attentional scales to analyse the attentional styles of the athlete. Some projections have been made about utilizing the TAIS for measuring interpersonal conflict or incompatibility that may exist between the coach and the athlete. Nideffer (1981) felt that:

> Because of the strong relationship between increasing arousal and attention and because of the role both play in performance, the addition of personality traits and needs, interpreted within the confines of interpersonal relationships, can act to increase the ability to predict and control behavior (p. 23).

Alderman (1984) has analysed the interpersonal scales and made feasible hypotheses concerning stress situations between the coach and athlete. Direct attention will be given to the four scales that are dealt with in this study.

The control scale on the TAIS measured a person's need to control interpersonal situations. The self-esteem scale reflected how one perceived oneself doing that (Nideffer, Pratt, 1981). Both scales are believed to be linked to the control scale on the FIRO-B. Conflict or incompatibility may occur when the following conditions arise (Alderman, 1984):

1. The coach and athlete both score high on the control scales, creating a power conflict.
2. Problems may occur when one or either of the coach or athlete score extremely high on the self-esteem scale. High scores indicate a reluctance to take criticism easily and frustration when they are not given charge of the situation.
3. Low self-esteem scores by the coach may identify stressful tendencies in situations where the coach must take responsibility.

The introversion and extroversion scores measured the degree that people wish to be included by other people. High scores on introversion indicated a need for privacy, a preference for being alone (Pratt, Nideffer, 1981). Their behavior was more inner-directed. The extrovert was outgoing, friendly, and expected togetherness by the group (Pratt, Nideffer, 1981). The extroversion scales measured one's need to be with other people and to be the center of attention.

The two scales of introversion and extroversion are linked with the inclusion scores on the FIRO-B in that they are postulated to measure the same construct:

> In inclusion, the conflict is between the joiner and the participator, who always like to do things "together" (high interchange) and the withdrawn person who prefers to be by himself (low interchange). The introvert-extrovert distinction is relevant here (xK^I) (Schutz, 1966:p. 111).

In many cases, the exchange compatibility score (xK) yields the same results as the reciprocal compatibility score for a dyad.

Interpersonal stress or incompatibility was likely to occur when the coaches and their athletes were significantly different on their scores on the respective scales. High extroversion scores would be incompatible with low extroversion scores and high introversion scores incompatible with low introversion scores. This was congruent with the inclusion scores from the FIRO-B in that people who expressed a high need to be included were compatible with others with a high need to be included. Extroverts are compatible with other extroverts.

Much of the above information was speculation by those who have worked with the TAIS for attentional purposes and are concerned with the interpersonal scores only to the extent that they may increase the understanding of the attentional problems that athletes may encounter. No empirical evidence was available to substantiate these hypotheses. They seem to be parallel to theories expressed by those involved with the FIRO-B and validation may be made for the interpersonal scales on the TAIS by the experimental research that links results from the two tests together.

Overview

From the research presented, evidence suggests that high compatibility between the coach and his athletes will promote positive results in an interdependent type task such as that found in the team sports of volleyball and basketball. Research is limited, however, and a greater understanding of all of the influencing factors should be explored before a clear picture of the interaction between the coach and his athletes can be determined. It is evident that leadership

qualities, role perceptions and goal expectations, to name a few, are all components of the interaction process.

The FIRO-B was an instrument used solely to measure interpersonal needs in the three areas of inclusion, control, and affection. Inclusion and control appear to be the most important in the coach-athlete interaction and measurement is useful for determining compatibility. The TAIS meanwhile, has been used solely for the purposes of attentional styles. Interpretations of the interpersonal scales in the TAIS may help to advance the literature in the areas of control and inclusion while expanding its own use for determining stress areas of incompatibility between the coach and athlete.

CHAPTER III

METHODS AND PROCEDURES

Sample

The subjects involved in this study were the coaches and athletes of the men's and women's volleyball and basketball teams at the University of Alberta during the 1984-85 season, as shown in Table I.

Table I

Number of Athletes and Coaches per Team

	Teams	Athletes	Coaches	Dyads
Mens' Basketball	A	10	2	20
Men's Volleyball	B	11	2	22
Women's Volleyball	C	11	2	22
Women's Basketball	D	11	1	11
				75

In total, there were 75 dyads created with each coach being paired up interpersonally with the athletes on their respective teams.

The players on the teams had played in a range from one to five years with the University team and the coaching staff had coached these teams for a range of one year to 11 previous years. In all cases the women were coached by women and the men were coached by men.

Instrumentation

The Test of Attentional and Interpersonal Style (TAIS)

The TAIS was developed by Robert Nideffer (1976) as a measure of attentional and interpersonal style. The test consists of 144 questions, each with a choice of five responses on a continuum from never to always

(see Appendix B). There are 17 variables measured by the TAIS, six reflecting attentional processes, two reflecting behavioral and cognitive control, and nine describing interpersonal behavioral style. The variables examined in this study were from the scales measuring interpersonal behavior, namely the control, self-esteem, extroversion and introversion scores. a comparison was made between these scores and corresponding scores on the second test, the FIRO-B, that were postulated to be testing the same constructs.

The validity of the scales used from the TAIS have been validated with other interpersonal scales. These include comparisons to similar constructs on the California F Scales, the Rotter Introversion-Extroversion (I-E) Scales, the Minnesota Multiphasic Personality Inventory (MMPI), the Maudsley Personality Inventory (MPI), and the Self-Perception Inventory (SI) scales (Nideffer, 1976).

There were four interpersonal scales used from the TAIS.

> The control scales provides information about the strength of a person's need for control in interpersonal situations (Nideffer, Pratt, 1981, p. 49).

The self-esteem scales measure the confidence people have in doing what they say they can. It is linked to the control scale because it reflects how people project themselves and how they believe others feel about them. If they score high on both scales, they will be very confident in dominating others.

The scales of introversion and extroversion are best interpreted together. The scores measure a person's need to be with other people (extroversion) and their need for privacy (introversion). The degree of inclusion ranges from the extreme extrovert, who needs to be the center of attention, to the extreme introvert, who is very aloof and withdrawn from personal contact.

The compatibility between the coach and the athletes will be determined by a subjective analysis of the scores according to the hypotheses outlined by Alderman (1984). These are found in the delimitation section of this study.

In previous research, the interpersonal scales have been interpreted only in the context of the attentional scales and not as independent behavioral constructs. It was the intent of this study to examine the value of the four interpersonal scales indicated, in the context of compatibility between the coaches and their athletes.

Fundamental Interpersonal Relations Orientation - Behavior FIRO-B

The FIRO-B was developed by William Schutz (1966) as a measure of interpersonal behavior. The test consists of 54 questions, split into four sections of 16 questions. Within each section there are a choice of six responses to the questions in that section. For closer examination of the questions and response categories see Appendix C.

The FIRO-B measures three interpersonal need areas: control, inclusion, and affection. Each of these need areas are assessed according to two dimensions, the first being the behavior that individuals express towards others and the second being how individuals want other people to behave towards them. The matching of these expressed and wanted scores in each of the need areas with the scores of another person will give information about the compatibility of their interaction (Schutz, 1966).

For the purpose of this study, the need areas examined were in the areas of inclusion and control. The need for inclusion is defined as a need to establish and maintain a relationship with others with respect to association and interaction. It may be termed satisfactory if there

is a mutual interest with other people (Schutz, 1966). The need for control revolves around establishing and maintaining a relation with others with respect to control and power. This is labelled satisfactory when there is an equilibrium between people concerning the degree of control they wish to express and the degree that they wish to receive. It involves respecting others and having respect for oneself, knowing that each is a competent, responsible person. When incompatibility is present, problems of control will be prominent (Schutz, 1966).

The need for affection will not be examined in this study for two reasons. Comparisons of scores on the FIRO-B and the TAIS do not allow for examination of affection behavior because there are no scales on the TAIS that are measuring the construct of affection. The second reason relates to the relative importance of affection to the coach-athlete interaction process. Inclusion and control appear to be much more prominent and relevant to the situation being examined than the need area of affection (Carron, Bennett, 1977).

The measure of compatibility that was calculated was a measure of reciprocal compatibility. This probes the potential that two people have towards mutually satisfying the dimensions of each other's needs, that being the expression and wanting of certain behaviors. The compatibility level will increase as one person's need to express a behavior is at an equivalent level to a second person's need to receive that behavior (Schutz, 1966).

Reciprocal compatibility is calculated by subtracting the expressed score of person A from the wanted score of person B and adding this absolute value to the absolute value of the expressed score of person B minus the wanted score of person A. Absolute values are used because the main concern is with the size of the difference rather than with its

direction (see Appendix D for the formula for reciprocal compatibility).

Scores may range from zero to 18 as a measure of reciprocal compatibility. The lower the score, the less the discrepancy between expressed and wanted scores, indicating a greater potential for compatibility in that need area.

Reciprocal compatibility was the measure used because of its comparative value to the results on the four scales on the TAIS. There are two other compatibility measures that have been used in other studies. These are originator compatibility and interchange compatibility which are not easily comparable to the TAIS. Further explanations of these can be found in Schutz (1966, p. 108).

The validity and reliability of the FIRO-B is very important because it is being used as the criterion measure for the interpersonal scales of the TAIS. Schutz (1966) has shown substantial evidence to indicate that the validity and reliability of the FIRO-B is well established.

The content validity and reproducibility of the FIRO-B is established through the use of the Guttman Scale, the type of scaling used in the development of the FIRO-B. The content validity exists in the test because of the principle behind the Guttman Scale. The Guttman Scale must be able to distribute subjects along a continuum measuring a single variable, such as expressed control. No confusion should occur concerning the meaning of the scores because of the unidimensional characteristic of the scales.

Guttman scales also have a built-in reproducibility that is a measure of internal consistency. If reproducibility is perfect, the pattern of a subject's responses should be reproducible from knowledge of their scales score alone. The FIRO-B scales show high and consistent reproducibility, being over 90% for all of the variables.

Schutz (1966) stated that interpersonal orientations develop early in life and remain basically intact through all situations. The coefficient of stability or test-retest reliability should be relatively high then to support this suggestion of stability in the traits one possesses. Schutz found there to be 70% stability in a one month testing period, with only a 10% chance of a subject moving from a high compatibility to a low compatibility category while missing the medium category altogether. There is a 30% chance of moving at least one category either way as the 70% stability would indicate. Underwood and Krafft (1973) found test-retest reliabilities over four weeks to be .77 in their study of factory workers split into a high-low compatibility dychotomy.

Schutz (1966) studied the relation between FIRO scores and political attitudes to test concurrent validity. Three of the four predicted relations were significant at the .05 level or better for interpersonal orientations being linked to specific political attitudes. He also investigated conformity and other variables in relation to FIRO scales to show construct validity. Results were positive and in the desired direction, though not significant.

Kramer (1967) compared results from the FIRO-B with self-ratings done by 25 subjects. There were significant correlations in five of the six areas with the sixth being very close to significance. The subjects predicted the same results as the FIRO-B on their own interpersonal behavior. This is perhaps one of the most significant indications of construct validity to date because there is no other criterion measure by which the FIRO-B can be compared.

In athletic situations, Carron (1978) found the FIRO-B gave the same results as those expected when examining the role behaviors of coaches. Pease, Locke and Burlingame (1971) also found some relationship

between incompatibility and athletes quitting the squad, indicating support for Schutz's theorems concerning compatibility.

Data Collection Procedure

The data for this study was collected during the early stages of the volleyball and basketball seasons, in October and November of 1984. The coaches of each of the teams were contacted and permission was given to administer the TAIS and the FIRO-B questionnaires prior to or as part of a practice session. The tests were administered by the researcher or a helper who was given specific instructions about the administration of the tests. Some of the teams had been involved in writing the TAIS earlier in the month of October, under identical instruction and those results were utilized, rather than readministering the test. In these instances the tests were written on separate occasions but under non-stress situations. When both tests were given at the same time, it was the choice of the subjects as to which test they wrote first. The instructions that were read to each group are found in Appendix A.

The two tests took approximately 45 minutes in total to complete. No time limit was set and the atmosphere was as relaxed as possible at all times.

Statistical Treatment

The compatibility scores for each team were analyzed within that team to measure two different results. The first statistical analysis involved examining intertest agreement. Compatibility scores for each test were divided into three relative categories for each coach and their team. These three categories were highest compatibility (1), medium compatibility (2), and lowest compatibility (3). Because there were 10 or 11 scores for each group, approximate divisions of one-third

were made in each group, with natural groupings of scores taken into account. These scores were then analyzed to determine the degree of interest agreement that existed between the TAIS and the FIRO-B in the areas of inclusion and control.

The second statistical analysis involved the use of the Spearman Rank Correlation (Hopkins, Glass, 1978). Compatibility scores for each group of coach-athlete dyads in the two areas of control and inclusion were analyzed to test the two hypotheses of the study. A correlation coefficient between compatibility scores on the TAIS and compatibility scores on the FIRO-B were calculated.

The statistical hypotheses tested were:

1) H_o: $p = 0$ (for the control area)

2) H_o: $p = 0$ (for the inclusion area)

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The primary purpose of this study was to compare the compatibility results obtained from four interpersonal scales on the TAIS to the compatibility scores in two of the need areas measured by the FIRO-B. Compatibility in the area of control was measured by the control and self-esteem scales on the TAIS and inclusion compatibility was measured by using the introversion and extroversion scales on the TAIS. These were collated with the compatibility scores on the control and inclusion scores on the FIRO-B.

Compatibility scores for the TAIS were determined by researcher evaluation and descriptive analysis. Scores from the FIRO-B were determined by calculating reciprocal compatibility.

There are seven groups discussed in the study. Each coach, seven in total, was part of a dyad with each athlete within their team. This cluster of dyads constituted a group. Because relative compatibility within each group was the focus of the evaluation, a summary of all of the 75 dyads was not feasible.

The results of the study will be displayed in two sections. The first section examines intertest agreement, a descriptive analysis which may contribute to the testing of the hypotheses. The second segment also tests the two hypotheses in question, by the use of correlational data.

Intertest Agreement

Compatibility ratings of high, medium, and low were determined for each need and each test. The ratings are relative to each group and could not be accumulated to give a total high (1), medium (2), and low (3) rating for the entire group. Table II briefly summarizes the percentage of interest agreement under two categories. The first category (+) is a percentage of results in which the compatibility of the TAIS and the FIRO-B produced identical ratings. An example would be the dyad of a coach and athlete scoring in the identical classification of high, medium, or low on both tests in the control area. The second category (0) is the percentage of results in which the compatibility ratings of the TAIS and the FIRO-B were the same or one category away from a perfect match. An example of this would be a dyad rating of 1 on the TAIS and 2 on the FIRO-B.

Because there are three divisions of compatibility, there is a 33% chance that the ratings on the two tests would be equivalent merely by chance. These results show a mean percentage of 49% and 37% for control and inclusion, respectively. This would indicate a positive relationship, above chance, for the ratings of control and inclusion being related in the two tests, though significance cannot be proven.

As far as the percentage for the second category (0) is concerned, there is a 66% chance that subjects will score a rating one category away from the identical match, if they are rated in the high or low category. Those with a rating of medium will score in that rating 100% of the time. The balance between those two scores is 77%. The results of the group show that there is a positive relationship between the ratings on the tests, with 12 of the 14 results showing percentages higher than 80%.

Table II

Intertest Agreement of the TAIS and FIRO-B (by percent)

GROUP	CONTROL		INCLUSION	
	+	0	+	0
1	27	91	27	82
2	73	91	27	64
3	55	91	45	82
4	27	73	55	91
5	40	90	50	90
6	50	80	10	80
7	73	91	45	100
MEAN	49	87	37	83

These findings are important because in many of the groups there was little discrepancy between a high rating and a low rating, using relative divisions, yet the two tests were able to discriminate between small differences in the three categories.

Spearman Rank Correlations

The hypotheses of this study were designed to test the correlation between the compatibility scores as determined by the TAIS, with compatibility scores calculated from the FIRO-B instrument. The Spearman Rank Correlation was used in an attempt to identify whether a correlation existed. From Table III it can be seen that significance was found in three groups measuring control compatibility and one group measuring inclusion compatibility. Ten of the 14 correlations were not significant.

Discussion

Other researchers, using the FIRO-B instrument, employed median scores to categorize dyads as either compatible or incompatible, rather than in categories of high, medium, and low. In a study of a college fraternity, significant results were noted between compatibility, as measured by the FIRO instrument and sociometric relations among fraternity members (Schutz, 1966). Carron and Bennett (1977) also used a median split to classify coach-athlete dyads as compatible and incompatible. Underwood and Krafft (1973) used median scores to compare compatibility and work effectiveness to create a high-low dichotomy. They experienced problems because there was not enough discrepancy between the high and low groups. In an attempt to decrease the possibility of the scores occurring in the categories merely by chance, three categories were chosen for this study, rather than only using a dichotomy. Even so, a similar situation exists in many of the groups that were

Table III

Spearman Rank Correlation:
TAIS Versus FIRO-B

GROUP	CONTROL	INCLUSION
1	.18	.02
2	.67*	.07
3	.46	.16
4	.03	.36
5	.69*	.36
6	.29	-.09
7	.75**	.60*

* alpha .05

** alpha .01

observed in this study and differences in scores were difficult to detect. In the second and seventh groups, where there was a greater discrepancy of scores on the FIRO-B, the TAIS showed a higher degree of identical matching in the ratings.

Percentages were considerably larger for the second category of intertest agreement. These results are worth closer examination when considering the results of the test-retest experiment by those studying the coefficient of stability of the FIRO-B (Schutz, 1966). Results of the distribution of scores on a high, middle, and low classification showed there was a 10% chance that subjects' scores would leap from a high to a low category. There was a 30% chance that they would fluctuate from one category to another category above or below their original placement. If a one category change is possible 30% of the time within one test's results, then it may occur between two different tests measuring the same construct. In eight of the groups in this study, there was less than a 10% indication that they would be in a high category on one test and a low category on the other. The means of this study for the groups being in the second category (0) were 87% and 83%, very close to the results of the test-retest experiment of the FIRO-B alone.

Although the correlations between the two tests were not significant in all cases, information attained from this study warrants further investigation of possible relationships that exist between the two tests. As the tests were used in this study, both are capable of treating the coach and the athlete as equally important facets in the examination of coach-athlete interpersonal relationships. This is crucial for further study of interpersonal behavior between the coach and athlete because every coach is different, as is every athlete. To have individual

compatibility scores for each dyad is beneficial to the coach in insuring positive relationships with his athletes.

The values of the Spearman Rank Correlations may have been increased if there would have been a greater discrepancy in scores within the different groups.

> The greater the variability among the observations, the greater the value of r (Hopkins, Glass, 1978, p. 139).

A homogeneous group will yield a smaller value of r than would be expected from a heterogeneous population. Not only were the scores clustered together in many cases, but identical scores within groups occurred frequently. This makes the rank order much less discriminate and will create "noise" in the results. The criterion measure, the FIRO-B could not distinguish clearly between subjects, because of their homogeneity, making it equally difficult for the TAIS to rank order subjects such that the small discrepancies would be detected.

Interference in the results comes from the presence of outliers, subjects who for some reason, score very differently on the tests in relation to the general population. Outliers would appear in many studies, but a larger sample size would minimize their influence on the results. An additional problem in the scores on the two tests may have resulted for the conditions under which the subjects were tested. The coaches volunteered the athletes to write the tests and it can only be assumed that this was acceptable to the athletes. The majority of the subjects may have responded positively but others have been indifferent to the whole testing environment. Some of the scores by the outliers would warrant a closer inspection of this phenomenon. The test results can only be assumed to be an accurate assessment of a person.

Homogeneity of the sample was suspected because of the clumping of many of the group scores. This would be consistent with the literature of Pease et al. (1971), who found that compatible athletes remained with the team for a longer period of time than those incompatible with the coach. The teams who were truncated in the direction of high compatibility ratings may be teams whose athletes had been with the team for a longer period of time.

Another interesting aside that should be noted is that three of the four groups that were significant were women's groups. Sex was not considered to be an influencing factor in the results, but clearly it should be investigated in future studies.

Measuring compatibility in the areas of control and inclusion is crucial to the coach-athlete relationship. Because of the role expectations that exist between leaders and subordinates, control conflicts must be detected and dealt with so that communication and learning can be enhanced. Communication is directly related to the degree of interaction that occurs, linking it to the need area of inclusion. As Singer and Kane (1979) point out, interaction is a social skill. It must be positive and high in quality to benefit the performance of the team. Compatibility in the area of inclusion would reduce stress and promote interaction. Detecting problems in this area would also help coaches and athletes to understand each other better.

This study yielded a number of positive correlations between the two tests. To the author's knowledge, this is the only study that has used the TAIS to measure coach-athlete compatibility. It is hoped that the results will stimulate further discussions of the possibilities that exist for the TAIS to monitor interpersonal relationships.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to explore whether or not a relationship existed between the compatibility scores of the TAIS and the FIRO-B. The control and self-esteem scores on the TAIS were compared to the control scores on the FIRO-B to assess compatibility in the area of control. Introversion and extroversion scores on the TAIS were collated with the inclusion scores on the FIRO-B to assess inclusion compatibility. Carron and Bennett (1978) suggest that inclusion is very important in compatibility because a relationship cannot exist without that interaction. Control compatibility is an important area to examine because of the leader-subordinate relation between a coach and his athletes.

The subjects were the athletes and coaches of the men's and women's volleyball and basketball teams at the University of Alberta. Nideffer's "Test of Attentional and Interpersonal Style" and Schutz's "Fundamental Interpersonal Relations Orientation-Behavior" instrument were administered to the subjects during the early months of the 1984-85 intercollegiate preseason. The scores of the scales used from the two tests were converted to compatibility rankings. These were examined using the Spearman Rank Correlation as well as being divided into three relative categories of high, medium, and low compatibility. Approximately one-third of each group's scores were in each category while accounting for natural divisions in the data. The ratings were relative to each group and not transferable to a total group summary.

Intertest agreement revealed that there was a positive relationship between the two tests although significance could not be proven. The

Spearman Rank Correlation showed significance in four of the 14 groups on the compatibility rankings.

The first hypothesis that the two tests would show similar compatibility results in the area of control was rejected in four of the seven groups, with two groups being significant at the .05 alpha level and one at the .01 level. All of the correlations were in the expected direction, that being positive.

Hypothesis two, dealing with the similarity in results of compatibility in the area of inclusion, as measured by the two tests, was rejected in six of the seven groups. The majority of the other correlations were in a positive direction also, but the levels were not as high as was expected. One of the 14 correlations was of a negative nature.

The two hypotheses were rejected in 10 of the 14 groups but all of the relationships between the tests were positive except for one group. This positive relationship was stronger in the area of control compatibility than in the area of inclusion compatibility.

When interpreting results there must be a level of confidence established concerning whether the TAIS was measuring the same constructs as the criterion measure, the FIRO-B. Nunnally (1970) expressed support for a moderately high correlation being appropriate between items of different tests that were measuring the same constructs. Correlations that were extremely high would indicate some confusion as to which test was the criterion measure for those particular constructs. Low correlations would indicate little or no relationship between the constructs measured by the two tests.

Conclusions

These conclusions are drawn on the basis of the following:

1. A significant correlation existed in three of the groups in the area of control compatibility. All of the correlation coefficient levels were moderately positive. Interest agreement supported a relationship between the two tests, with 49% of the scores being in identical categories of compatibility. Chance would have this happening only 33% of the time.
2. Essentially no significant relationship existed between the two tests in the area of inclusion compatibility. Only one of the seven groups proved to be significant at the required level with the other groups showing only a low positive relationship. In the area of intertest agreement there was a higher trend towards a positive relationship between the two tests.

Recommendations

The following recommendations for future study are made after the completion of this investigation.

1. A larger sample of comparable compatibility scores should be developed. This would involve securing one coach responsible for a large number of athletes. Because of the implications of the results to the athletic scene, it would be desirable to test coaches and athletes but if it is necessary to look to other areas for the required sample size, then deviance from the athletic scene may be most beneficial.
2. The introversion and extroversion scales should be examined more closely to determine the most appropriate type of compatibility measure for comparison to the FIRO-B.

3. The calculation of compatibility scores from the TAIS should be examined to give a one number score that would be indicative of the compatibility level. Further correlational analysis could then be conducted on the data.
4. The relationship between the sex of the subjects may be an area of further investigation.
5. The importance of honesty in answering the questions should be stressed more emphatically. Subjects should be involved on a volunteer basis rather than being volunteered by the coaches of the teams to insure this. This would eliminate some of the indifference that may have been present during the writing of the tests.
6. Recommendations for dealing with situations of incompatibility should be addressed and made available to coaches wishing to receive counselling about their teams.

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APPENDICES

APPENDIX A

TEST INSTRUCTIONS

APPENDIX A

Test Instructions

1. Please complete both questionnaires as honestly and accurately as possible. Although an answer is requested for each question, do not dwell on any one question for too long.

2. The FIRO-B is a questionnaire about how you interact with people. There are no wrong or right answers so please just answer each question as honestly as you can. Some of the questions may seem to be repetitive but each item is different and should be answered independently and without regard for the other questions.

3. The TAIS is a slightly longer test, measuring attentional and interpersonal style. As mentioned before, but of great importance, is the understanding that there are no wrong or right answers. Answer as honestly as you can without dwelling on any of the questions for too long.

4. No names will be used in the study and results. If desired, the results will be made available at the completion of the study.

5. The tests can be written in whichever order the athletes involved would like to write them.

APPENDIX B

B-I. TEST OF ATTENTION AND INTERPERSONAL STYLE

B-II. PROFILE SHEET

B-III. QUESTIONS WHICH APPLY TO INTERPERSONAL SCALES

APPENDIX B-I

Test of Attentional and Interpersonal Style
(Robert M. Nideffer, Ph.D.)

Instructions

Use No. 2 Pencil Do Not Write on the Test Booklet

Read each item carefully and then answer according to the frequency with which it describes you or your behavior. For example, item 1 is "When people talk to me, I find myself distracted by the sights and sounds around me."

A = NEVER
B = RARELY
C = SOMETIMES
D = FREQUENTLY
E = ALWAYS

If your answer to the first item is SOMETIMES, you would mark with a No. 2 pencil under C for item number 1. The same key is used for every item, thus each time you mark an A you are indicating NEVER, etc.

1. Please be sure to mark your name in the spaces provided at the right of the answer sheet.

2. Fill in your date of birth in the spaces provided at the bottom of the answer sheet.

3. Indicate your sex in the space provided.

4. At the bottom of the answer sheet under Grade, please indicate the number of years of schooling you have completed.

1. When people talk to me I find myself distracted by the sights and sounds around me.

2. When people talk to me I find myself distracted by my own thoughts and ideas.

3. All I need is a little information and I can come up with a large number of ideas.

4. My thoughts are limited to the objects and people in my immediate surroundings.

5. I need to have all the information before I say or do anything.

6. The work I do is focused and narrow, proceeding in a logical fashion.

7. I run back and forth from task to task.

8. I seem to work in "fits and starts" or "bits and pieces".

9. The work I do involves a wide variety of seemingly unrelated material and ideas.

10. My thoughts and associations come so rapidly I can't keep up with them.

11. The world seems to be a booming, buzzing brilliant flash of color and confusion.

12. When I make a mistake it is because I did not wait to get all of the information.

13. When I make a mistake it is because I waited too long and got too much information.

14. When I read it is easy to block out everything but the book.

15. I focus on one small part of what a person says and miss the total message.

16. In school I failed to wait for the teachers' instructions.

17. I have difficulty clearing my mind of a single thought or idea.

18. I think about one thing at a time.

19. I get caught up in my thoughts and become oblivious to what is going on around me.

20. I theorize and philosophize.

21. I enjoy quiet, thoughtful times.

22. I would rather be feeling and experiencing the world than my own thoughts.

23. My environment is exciting and keeps my involved.

24. My interests are broader than most people's.

25. My interests are narrower than most people's.

26. It is easy for me to direct my attention and focus narrowly on something.

27. It is easy for me to focus on a number of things at the same time.

28. It is easy for me to keep thoughts from interfering with something I am watching or listening to.

29. It is easy for me to keep sights and sounds from interfering with my thoughts.

30. Happenings or objects grab my attention.

31. It is easy for me to keep my mind on a single thought or idea.

32. I am good at picking a voice or instrument out of a piece of music that I am listening to.

33. With so much going on around me, it's difficult for me to think about anything for any length of time.

34. I am good at quickly analyzing complex situations around me, such as how a play is developing in football or which of four or five kids started a fight.

35. At stores I am faced with so many choices I can't make up my mind.

36. I spend a great deal of my time thinking about all kinds of ideas I have.

37. I figure out how to respond to others by imagining myself in their situation.

38. In school I would become distracted and didn't stick to the subject.

39. When I get anxious or nervous my attention becomes narrow and I fail to see important things that are going on around me.

40. Even though I am not hungry, if something I like is placed in front of me, I'll eat it.

41. I am more of a doing kind of person than a thinking one.

42. In a room filled with children or out on a playing field, I know what everyone is doing.

43. It is easy for me to keep my mind on a single sight or sound.

44. I am good at rapidly scanning crowds and picking out a particular person or face.

45. I have difficulty shifting back and forth from one conversation to another.

46. I get confused trying to watch activities such as a football game or circus where a number of things are happening at the same time.

47. I have so many things on my mind that I become confused and forgetful.

48. On essay tests my answers are (were) too narrow and don't cover the topic.

49. It is easy for me to forget about problems by watching a good movie or by listening to music.

50. I can't resist temptation when it is right in front of me.

51. In games I make mistakes because I am watching what one person does and forget about the others.

52. I can plan several moves ahead in complicated games like bridge and chess.

53. In school I was not a "thinker".

54. In a roomful of people I can keep track of several conversations at the same time.

55. I have difficulty telling how others feel by watching them and listening to them talk.

56. People have to repeat things to me because I become distracted by irrelevant sights or sounds around me.

57. I make mistakes because I try to do too many things at once.

58. I am good at analyzing situations and predicting in advance what others will do.

59. On essay tests my answers are (were) too broad, bringing in irrelevant information.

60. People fool me because I don't bother to analyze the things that they say; I take them at face value.

61. I would much rather be doing something than just sitting around thinking.

62. I make mistakes because my thoughts get stuck on one idea or feeling.

63. I am constantly analyzing people and situations.

64. I get confused at busy intersections.

65. I am good at glancing at a large area and quickly picking out several objects, such as in those hidden figure drawings in children's magazines.

66. I get anxious and block out everything on tests.

67. Even when I am involved in a game or sport, my mind is going a mile a minute.

68. I can figure out how to respond to others just by looking at them.

69. I have a tendency to get involved in a conversation and forget important things like a pot on the stove, or like leaving the motor running on the car.

70. It is easy for me to bring together ideas from a number of different areas.

71. Sometimes lights and sounds come at me so rapidly they make me lightheaded or dizzy.

72. People have to repeat things because I get distracted by my own irrelevant thoughts.

73. People pull the wool over my eyes because I fail to see when they are obviously kidding by looking at the way they are smiling or listening to their joking tone.

74. I can spend a lot of time just looking at things with my mind almost a complete blank except for reflecting the things that I see.

75. I sometimes confuse others because I tell them too many things at once.

76. I engage in physical activity.

77. People describe me as serious.

78. I sit alone listening to music.

79. People take advantage of me.

80. I keep my thoughts to myself.

81. I keep my feelings to myself.

82. I am good at getting my own way.

83. I like to argue.

84. Others see me as a loner.

85. I talked a lot in class when I was in school.

86. I enjoy intellectual competition with others.

87. I enjoy individual athletic competition.

88. I compete(d) athletically.

89. I physically express my feelings of affection.

90. I compete with myself intellectually.

91. I complete with myself physically.

92. I enjoy activities with danger or an element of the unknown in them.

93. I express my opinions on issues.

94. I can keep a secret.

95. When I believe deeply in something I find I am a poor loser and unable to compromise.

96. I am socially self-confident when interacting with those who are like myself.

97. I am socially self-confident when interacting with authority figures.

98. I am socially self-confident when talking in front of large groups.

99. I am socially self-confident when talking with the opposite sex.

100. I express my anger.

101. I dated in high school.

102. People think I am a clown.

103. I get mad and express it.

104. I get down on myself.

105. I was one of the smartest kids in school.

106. I am a good person.

107. My feelings are intense.

108. I need to help others.

109. I need to be liked.

110. I enjoy planning for the future.

111. I wish I lived in a different time.

112. I feel guilty.

113. I feel ashamed.

114. I am seen as a cold person by others.

115. I am a good mixer.

116. I am socially outgoing.

117. I have difficulty waiting for good things to happen.

118. I peeked at Christmas time.

119. When I am angry I lose control and say things that sometimes hurt others.

120. I have been angry enough that I physically hurt someone.

121. At dances or parties I find a corner and avoid the limelight.

122. I acted in dramatic productions in high school and/or college.

123. In school the kids I hung around with were athletes.

124. In school the kids I hung around with were intellectuals.

125. In school the kids I hung around with were popular.

126. In school the kids I hung around with were outcasts or loners.

127. People trust me with their secrets.

128. I am in control in interpersonal situations.

129. I fought in school.

130. I have used illegal drugs.

131. In groups I am one of the leaders.

132. People admire me for my intellect.

133. People admire me for my physical ability.

134. People admire me for my concern for others.

135. People admire me for my social status.

136. I ran for class offices in school.

137. I feel as though I am a burden to others.

138. People see me as an angry person.

139. I see myself as an angry person.

140. I have a lot of energy for my age.

141. I am always on the go.

142. I cut school in high school.

143. I have engaged in activities that could get me in trouble with the police.

144. I guess you could call me a poor loser.

APPENDIX B-II

Profile Sheet

TAIS PROFILE

Name: _____

Sport: _____

T SCORES

	ATTENTIONAL						CONTROL		INTERPERPERSONAL									
90	24	35	32	27	40	42	66	36	64	42		23	48	39		27		
		34	31	26	39	41	65	35	62	41			47	38	32		34	
	23	33		25	38	40	64	34	61	40		22	46	37		26	33	
		32	30		37	39	63	33	60	39			45	36	31	25	32	
80	22	31	29	24	36	38	61		59	38		21	44	35	30	24		
	21	30	28	23	35		60	32	58	37			43	34	29	23	31	
		29			34	37	59	31	57	35		20	42		28	22	30	
	20	28	27	22	33	36	58	30	56	34	28		41	33			29	
		27	26	21		35	56	29	54	33	27		40	32	27	21	28	
70	19	26			32	34	55	28	53	32	26	19	38	31	26	20		
		25	25	20	31	33	54		52	31	25		37	30	25	19	27	
	18	24	24	19	30	32	53	27	51	30	24	18	36	29	24	18	26	
				18	29	31	51	26	50	29	23		35	28			25	
	17	23	23		28	30	50	25	49	28	22	17	34		23	17		
60		22	22	17	27	29	49	24	47	27	21		33	27	22	16	24	HIGH
	16	21	21	16	26		48	23	46	26	20	16	32	26	21	15	23	
		20			25	28	46	22	45	25	19		31	25	20	14	22	
	15	19	20	15	24	27	45		44	24	18	15	29	24		13	21	
		18	19	14	23	26	44	21	43	22	17		28	23	19			
50	14	17			22	25	43	20	42	21	16	14	27	22	18	12	20	
		16	18	13	21	24	41	19	40	20	15		26	21	17	11	19	
	13	15	17	12	20	23	40	18	39	19			25		16	10	18	
		14		11	19	22	39	17	38	18	14	13	24	20		9	17	
	12	13	16		18	21	38		37	17	13		23	19	15			
40		12	15	10	17	20	37	16	36	16	12	12	22	18	14	8	16	LOW
	11	11	14	9			35	15	35	15	11		20	17	13	7	15	
		10			16	19	34	14	33	14	10	11	19	16	12	6	14	
	10	9	13	8	15	18	33	13	32	13	9		18	15		5		
	9	8	12	7	14	17	32	12	31	12	8	10	17		11	4	13	
30				6	13	16	30		30	11	7		16	14	10		12	
	8	7	11		12	15	29	11	29	10	6	9	15	13	9	3	11	
		6	10	5	11	14	28	10	28	8	5		14	12	8	2	10	
	7	5		4	10	13	27	9	27	7	4	8	13	11		1		
		4	9		9	12	25	8	25	6	3		12	10	7		9	
20	6	3	8	3	8	11	24	7	24	5	2		10	9	6		8	
		2	7	2	7		23		23	4	1	7	9		5		7	
	5	1			6	10	22	6	22	3			8	8	4			
			6	1	5	9	20	5	21	2		6	7	7			6	
	4		5		4	8	19	4	20	1			6	6	3		5	
10	BET	OET	BIT	OIT	NAR	RED	INFP	BCON	CON	SES	DEP	P/O	OBS	EXT	INT	IEX	NAE	PAE

APPENDIX B-III

Questions Pertaining to Interpersonal Scales of Introversion, Extroversion, Control, and Self-Esteem on TAIS

Scale	Questions
Introversion - 11	21, 36, 41, 77, 78, 80, 81, 84, 114, 121, 124
Extroversion - 15	85, 86, 101, 102, 108, 109, 115, 116, 122, 125, 131, 133, 134, 135, 136
Control - 20	37, 58, 60, 63, 68, 79, 82, 83, 86, 87, 88, 90, 91, 92, 93, 95, 100, 128, 129, 131
Self-Esteem - 13	24, 90, 91, 96, 98, 105, 106, 131, 132, 133, 134, 135

APPENDIX C

C-I. FIRO-B

C-II. QUESTIONS PERTAINING TO CONTROL AND INCLUSION NEED AREAS USED IN THE STUDY

APPENDIX C-I

FIRO-B

For each statement below, decide which of the following answers best applies to you. Place the number of the answer to the left of the statement. Please be as honest as you can.

1. usually 2. often 3. sometimes 4. occasionally

5. rarely 6. never

_____ 1. I try to be with people.

_____ 2. I let other people decide what to do.

_____ 3. I join social groups.

_____ 4. I try to have close relationships with people.

_____ 5. I tend to join social organizations when I have an opportunity.

_____ 6. I let other people strongly influence my actions.

_____ 7. I try to be included in informal social activities.

_____ 8. I try to have close, personal relationships with people.

_____ 9. I try to include other people in my plans.

_____ 10. I let other people control my actions.

_____ 11. I try to have people around me.

_____ 12. I try to get close and personal with people.

_____ 13. When people are doing things together I tend to join them.

_____ 14. I am easily led by people.

_____ 15. I try to avoid being alone.

_____ 16. I try to participate in group activities.

For each of the next group of statements, choose one of the following answers:

1. most people 2. many people 3. some people 4. a few people

5. one or two people 6. nobody

_____ 17. I try to be friendly to people.

_____ 18. I let other people decide what to do.

_____ 19. My personal relations with people are cool and distant.

_____ 20. I let other people take charge of things.

_____ 21. I try to have close relationships with people.

_____ 22. I let other people strongly influence my actions.

_____ 23. I try to get close and personal with people.

_____ 24. I let other people control my actions.

_____ 25. I act cool and distant with people.

_____ 26. I am easily led by people.

_____ 27. I try to have close, personal relationships with people.

For each of the next group of statements, choose one of the following answers:

1. most people 2. many people 3. some people 4. a few people

5. one or two people 6. nobody

_____ 28. I like people to invite me to things.

_____ 29. I like people to act close and personal with me.

_____ 30. I try to influence strongly other people's actions.

_____ 31. I like people to invite me to join in their activities.

_____ 32. I like people to act close toward me.

_____ 33. I try to take charge of things when I am with people.

_____ 34. I like people to include me in their activities.

_____ 35. I like people to act cool and distant toward me.

_____ 36. I try to have other people do things the way I want them done.

_____ 37. I like people to ask me to participate in their discussions.

_____ 38. I like people to act friendly toward me.

_____ 39. I like people to invite me to particpate in their activities.

_____ 40. I like people to act distant toward me.

For each of the next group of statements, choose one of the following answers:

1. usually 2. often 3. sometimes 4. occasionally

5. rarely 6. never

_____ 41. I try to be the dominant person when I am with people.

_____ 42. I like people to invite me to things.

_____ 43. I like people to act close toward me.

_____ 44. I try to have other people do things I want done.

_____ 45. I like people to invite me to join their activities.

_____ 46. I like people to act cool and distant toward me.

_____ 47. I try to influence strongly other people's actions.

_____ 48. I like people to include me in their activities.

_____ 49. I like people to act close and personal with me.

_____ 50. I try to take charge of things when I'm with people.

_____ 51. I like people to invite me to participate in their activities.

_____ 52. I like people to act distant toward me.

_____ 53. I try to have other people do things the way I want them done.

_____ 54. I take charge of things when I'm with people.

APPENDIX C-II

Questions Pertaining to Control and Inclusion Need Areas Used in the Study

Scale	Questions
Expressed Control	30, 33, 36, 41, 44, 47, 50, 53, 54
Wanted Control	1, 6, 10, 14, 17, 20, 22, 24, 26
Expressed Inclusion	1, 3, 5, 7, 9, 11, 13, 15, 16
Wanted Inclusion	28, 31, 34, 37, 39, 42, 48, 51

APPENDIX D

CALCULATION OF RECIPROCAL COMPATIBILITY

APPENDIX D

Reciprocal Compatibility

$$rK_{ca} = \left| e_c - w_a \right| + \left| e_a - w_c \right|$$

rK_{ca} - Reciprocal compatibility between coach and athlete. Control and inclusion scores can be applied to the formula to get rK^C and rK^I

e - expressed behavior in a need area

w - wanted behavior in a need area

c - coach's score in that behavior

a - athlete's score in that behavior

rK^C_{ca} - reciprocal compatibility in the control area

rK^I_{ca} - reciprocal compatibility in the inclusion area